

**Listing of the Claims:**

Claim 1 (Currently Amended): A continuous vacuum carburizing process comprising:

under a reduced pressure of 5 kPa or less, forming at least one carburizing atmosphere in which pressure and gas composition are constant with one of chain saturated hydrocarbon, chain unsaturated hydrocarbon gas and cyclic hydrocarbon used as a carburizing medium;

lowering pressure in a surrounding area of the carburizing atmosphere than the pressure of the carburizing atmosphere;

activating carbon in the carburizing atmosphere by heating the carburizing atmosphere to 850° C to 1050° C; and

passing one material of a metal wire, a metal strip and a metal pipe, which has a carbon content equal to or less than a desired carbon content, continuously through the carburizing atmosphere and thereby carburizing the material;

supplying and discharging carrier gas to/from a fixed area through which the material passes following the carburizing atmosphere to form carrier gas atmosphere in which the carburizing medium does not exist, and heating the fixed area to cause the carbon carburized in the material to be diffused into inner sections of the material; and

repeating the passing of the material through the carburizing atmosphere and then through the fixed area multiple times.

Claims 2-3 (Canceled).

Claim 4 (Original): The continuous vacuum carburizing process according to claim 1, wherein said activating carbon comprises bringing the carbon into a plasma state and heating the carburizing atmosphere to 400° C to 1050° C.

Claims 5-7 (Canceled).

Claim 8 (Original): The continuous vacuum carburizing process according to claim 1, wherein carburizing is performed until the material reaches or exceeds the desired carbon content.

Claim 9 (Original): The continuous vacuum carburizing process according to claim 1, wherein the material has a diameter of 0.02 mm to 3 mm in case of the metal wire, a thickness or width of 0.02 mm to 3 mm in case of the metal strip and a wall thickness of 0.02 mm to 3 mm in case of the metal pipe, and the material is carburized to a center of its cross section.

Claim 10 (Original): The continuous vacuum carburizing process according to claim 1, wherein the material is carburized only in a surface layer thereof.

Claim 11 (Original): The continuous vacuum carburizing process according to claim 1, wherein the material comprises one of carbon steel for machine construction, alloy steel for machine construction, tool steel, spring steel and stainless steel.

Claim 12 (Original): The continuous vacuum carburizing process according to claim 1, wherein the material comprises one of a nickel alloy and a cobalt alloy containing one or more of carbide-forming elements of boron, titanium, vanadium, chromium, zirconium, niobium, molybdenum, hafnium, tantalum and tungsten.

Claim 13 (Original): The continuous vacuum carburizing process according to claim 1, wherein the material comprises one of a metal and an alloy which has as a main component one of carbide-forming elements of boron, titanium, vanadium, chromium, zirconium, niobium, molybdenum, hafnium, tantalum and tungsten.